# PATENT COOPERATION TREATY

# **PCT**

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.				
346894D21709	ACTION					
International application No.	International filing date (day/month/yea	ar) (Earliest) Priority Date (day/month/year)				
PCT/IB2004/003698	PCT/IB2004/003698 22/10/2004 23/10/2003					
Applicant		•				
AB SCIENCE						
This International Search Report has bee according to Article 18. A copy is being tr	en prepared by this International Searchir ansmitted to the International Bureau.	ng Authority and is transmitted to the applicant				
This International Search Report consists						
X It is also accompanied by	a copy of each prior art document cited	in this report.				
Basis of the report     a. With regard to the language, the language in which it was filed, un	international search was carried out on less otherwise indicated under this item.	the basis of the international application in the				
The international this Authority (Re		translation of the international application furnished to				
b. With regard to any nucle	otide and/or amino acid sequence dis	closed in the international application, see Box No. I.				
2. Certain claims were fou	und unsearchable (See Box II).					
3. Unity of invention is la	cking (see Box III).					
4. With regard to the <b>title</b> ,						
the text is approved as s	ubmitted by the applicant.	·				
X the text has been establi	shed by this Authority to read as follows:					
2-AMINOARYLOXAZOLE CO	MPOUNDS AS TYROSINE KINA	SE INHIBITORS				
5 With speed to the sheets						
5. With regard to the abstract,	uhmittad by the applicant					
- ''	ubmitted by the applicant.	Authority as it appears in Box No. IV. The applicant				
the text has been estable may, within one month fr	om the date of mailing of this internation	al search report, submit comments to this Authority.				
6. With regard to the drawings,						
a. the figure of the <b>drawings</b> to be	published with the abstract is Figure No.					
as suggested by	* *					
	nis Authority, because the applicant failed					
	nis Authority, because this figure better c	haracterizes the invention.				
b none of the figures is to	be published with the abstract.					

International application No.

PCT/IB2004/003698

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The present invention relates to novel compounds selected from 2-aminoaryloxazoles of formula I that selectively modulate, regulate, and/or inhibit signal transduction mediated by certain native and/or mutant tyrosine kinases implicated in a variety of human and animal diseases such as cell proliferative, metabolic, allergic, and degenerative disorders. More particularly, these compounds are potent and selective c-kit, bcr-abl, FGFR3 and/or Flt-3 inhibitors.

$$R_7$$
 $R_7$ 
 $R_8$ 
 $R_8$ 
 $R_8$ 
 $R_8$ 
 $R_8$ 
 $R_8$ 

**FORMULA I** 

International Application No PCT/IB2004/003698

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61K31/422 A61K31/42 A61P37/00

A61P35/00

C07D263/48 A61P29/00

CO7D413/04

CO7D413/14

-According to International Patent Classification (IPC) or to both national classification and IPC

#### **B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols) IPC 7 C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
E	WO 2005/000298 A (TRIAD THERAPEUTICS, INC; DONG, QING; PIERRE, FABRICE; WANG, JIANQIANG) 6 January 2005 (2005-01-06) example 6	1-22		
P,X	WO 2004/032882 A (SMITHKLINE BEECHAM CORPORATION; BROWN, MATTHEW, LEE; CHEUNG, MUI; DICK) 22 April 2004 (2004-04-22) examples on pages 69-187	1-22		
P,Y	WO 2004/001059 A (BRISTOL-MYERS SQUIBB COMPANY; BORZILLERI, ROBERT, M; TOKARSKI, JOHN, S) 31 December 2003 (2003-12-31) claims 1,13	1-22		

X Further documents are listed in the continuation of box C.	Patent family members are listed in annex.		
A' document defining the general state of the art which is not considered to be of particular relevance E' earlier document but published on or after the international filing date L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) O' document referring to an oral disclosure, use, exhibition or other means P' document published prior to the international filing date but later than the priority date claimed	<ul> <li>*T* tater document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</li> <li>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</li> <li>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</li> <li>*&amp;* document member of the same patent family</li> </ul>		
Date of the actual completion of the international search	Date of mailing of the international search report  12/07/2005		
28 June 2005  Name and mailing address of the ISA	Authorized officer		
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Bérillon, L		

2

International Application No PCT/IB2004/003698

	Α	PC1/182004/003098		
C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT  Category Citation of document, with indication, where appropriate, of the relevant passages  Relevant to claim No.				
	WO_02/45652_A_(MERCK_&_CO,_INC;_BILODEAU, MARK, T; HARTMAN, GEORGE, D; HOFFMAN, JACO) 13 June 2002 (2002-06-13) claims 1,25	1_22		
	EP 0 949 242 A (CHUGAI SEIYAKU KABUSHIKI KAISHA; CHUGAI SEIYAKUKABUSHIKI KAISHA) 13 October 1999 (1999-10-13) tabe 77, examples 516, 517 and 518	1-17		
	US 5 000 775 A (GRABIAK ET AL) 19 March 1991 (1991-03-19) example 12, column 19	1-17		
	EP 0 254 259 A (OTSUKA PHARMACEUTICAL FACTORY, INC) 27 January 1988 (1988-01-27) table 4, compound 49	1-17,20		
	MURALI DHAR T. G. ET AL.: "A modified approach to 2-(N-Aryl)-1,3-oxazoles" ORGANIC LETTERS, vol. 4, no. 12, 2002, pages 2091-2093, XP002333344 table 1, compounds 13-15	1-17		
	NATH ET AL.: "Synthesis and mercuration of some new 2-arylamino-4,5-disubstituted oxazoles as pesticides" INDIAN JOURNAL OF CHEMISTRY, SECTION B: ORGANIC CHEMISTRY INCLUDING MEDICINAL CHEMISTRY, vol. 20(B), no. 9, 1981, pages 827-829, XP009049725 table 1	1-17		
	RAO ET AL.: "Synthesis and fungitoxicity of substituted pyrazolyloxazole" JOURNAL OF THE INDIAN CHEMICAL SOCIETY, vol. 58, no. 9, 1981, pages 925-926, XP009049726 table 1; compounds 6, 9	1-17		

2

Information on patent family members-

International Application No
PCT/IB2004/003698

Patent document cited in search report	Publication date		it family iber(s)	Publication date	
WO 2005000298	A 06-01-2005		254236 A1 000298 A2	16-12-2004 06-01-2005	
WO 2004032882	A 22-04-2004		287178 A1 032882 A2	04-05-2004 22-04-2004	
WO 2004001059	A 31-12-2003	EP 15 WO 20040	251559 A1 513818 A2 001059 A2 077696 A1	06-01-2004 16-03-2005 31-12-2003 22-04-2004	
WO 0245652	A 13-06-2002	CA 24 EP 13 JP 20045 WO 02 US 20040	244102 A 429728 A1 341540 A2 524282 T 245652 A2 063720 A1 137755 A1	18-06-2002 13-06-2002 10-09-2003 12-08-2004 13-06-2002 01-04-2004 26-09-2002	
EP 0949242	A 13-10-1999	AU 53 CA 22 EP 09 NO 9 PL 3 US 63 HU 00 WO 98 JP 102 RU 21	742388 B2 339498 A 275933 A1 949242 A1 993109 A 334304 A1 331553 B1 000321 A2 328257 A1 237028 A 193554 C2	03-01-2002 17-07-1998 02-07-1998 13-10-1999 24-08-1999 14-02-2000 18-12-2001 28-08-2000 02-07-1998 08-09-1998 27-11-2002 21-04-2004	
US 5000775	A 19-03-1991	NONE			
EP 0254259	A 27-01-1988	AU 75 DK 3 EP 02 JP 10 JP 15 JP 60 US 48 US 50 JP 15 JP 22	590935 B2 579987 A 377487 A 254259 A2 025756 A 024115 C 051679 B 368183 A 059598 A 041073 C 138265 A	23-11-1989 28-01-1988 22-01-1988 27-01-1988 27-01-1989 25-04-1995 06-07-1994 19-09-1989 22-10-1991 23-06-1995 28-05-1990 31-08-1994	

nal Application No PCT/IB2004/003698

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61K31/42 A61K31/42

A61P37/00

A61P35/00

C07D263/48 A61P29/00

C07D413/04

C07D413/14

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

Minimum documentation searched (classification system tollowed by classification symbols)

CO7D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, CHEM ABS Data

C. DOCUM	ENTS CONSIDERED TO BE RELEVANT	
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 2005/000298 A (TRIAD THERAPEUTICS, INC; DONG, QING; PIERRE, FABRICE; WANG, JIANQIANG) 6 January 2005 (2005-01-06) example 6	1-22
P,X	WO 2004/032882 A (SMITHKLINE BEECHAM CORPORATION; BROWN, MATTHEW, LEE; CHEUNG, MUI; DICK) 22 April 2004 (2004-04-22) examples on pages 69-187	1-22
P,Y	WO 2004/001059 A (BRISTOL-MYERS SQUIBB COMPANY; BORZILLERI, ROBERT, M; TOKARSKI, JOHN, S) 31 December 2003 (2003-12-31) claims 1,13	1-22

X Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
Special categories of cited documents:  'A' document defining the general state of the art which is not considered to be of particular relevance  'E' earlier document but published on or after the international filing date  'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  'O' document referring to an oral disclosure, use, exhibition or other means  'P' document published prior to the international filing date but later than the priority date claimed	<ul> <li>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</li> <li>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</li> <li>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</li> <li>*&amp;* document member of the same patent family</li> </ul>
Date of the actual completion of the international search  28 June 2005	Date of mailing of the international search report  12/07/2005
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  Fax: (+31-70) 340-3016	Authorized officer  Bérillon, L

Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | Inti | In

		FC1/162004/003698
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 02/45652 A (MERCK & CO., INC; BILODEAU, MARK, T; HARTMAN, GEORGE, D; HOFFMAN, JACO) 13 June 2002 (2002-06-13) claims 1,25	1-22
X	EP 0 949 242 A (CHUGAI SEIYAKU KABUSHIKI KAISHA; CHUGAI SEIYAKUKABUSHIKI KAISHA) 13 October 1999 (1999-10-13) tabe 77, examples 516, 517 and 518	1-17
X	US 5 000 775 A (GRABIAK ET AL) 19 March 1991 (1991-03-19) example 12, column 19	1-17
Χ .	EP 0 254 259 A (OTSUKA PHARMACEUTICAL FACTORY, INC) 27 January 1988 (1988-01-27) table 4, compound 49	1-17,20
X	MURALI DHAR T. G. ET AL.: "A modified approach to 2-(N-Aryl)-1,3-oxazoles" ORGANIC LETTERS, vol. 4, no. 12, 2002, pages 2091-2093, XP002333344 table 1, compounds 13-15	1-17
X	NATH ET AL.: "Synthesis and mercuration of some new 2-arylamino-4,5-disubstituted oxazoles as pesticides" INDIAN JOURNAL OF CHEMISTRY, SECTION B: ORGANIC CHEMISTRY INCLUDING MEDICINAL CHEMISTRY, vol. 20(B), no. 9, 1981, pages 827-829, XP009049725 table 1	1-17
X	RAO ET AL.: "Synthesis and fungitoxicity of substituted pyrazolyloxazole" JOURNAL OF THE INDIAN CHEMICAL SOCIETY, vol. 58, no. 9, 1981, pages 925-926, XP009049726 table 1; compounds 6, 9	1–17
	*	

Inti al Application No
PCT/IB2004/003698

	•		1	
Patent document cited in search report	Publication date	Patent fa membe		Publication date
WO 2005000298 A	06-01-2005	US 2004254 WO 2005000	4236 A1 0298 A2	16-12-2004 06-01-2005
WO 2004032882 A	22-04-2004	AU 200328 WO 200403	7178 A1 2882 A2	04-05-2004 22-04-2004
WO 2004001059 A	31-12-2003	AU 200325 EP 151: WO 200400 US 200407	3818 A2 1059 A2	06-01-2004 16-03-2005 31-12-2003 22-04-2004
WO 0245652 A	13-06-2002	CA 2429 EP 1343 JP 2004524	5652 A2 3720 A1	18-06-2002 13-06-2002 10-09-2003 12-08-2004 13-06-2002 01-04-2004 26-09-2002
EP 0949242 A	13-10-1999	AU 5339 CA 2279 EP 0949 NO 999 PL 333 US 633 HU 0000 WO 9820 JP 1023 RU 219	2388 B2 9498 A 5933 A1 9242 A1 3109 A 4304 A1 1553 B1 0321 A2 8257 A1 7028 A 3554 C2	03-01-2002 17-07-1998 02-07-1998 13-10-1999 24-08-1999 14-02-2000 18-12-2001 28-08-2000 02-07-1998 08-09-1998 27-11-2002 21-04-2004
US 5000775 A	19-03-1991	NONE		· <del></del>
EP 0254259 A	27-01-1988	AU 7579 DK 37 EP 025 JP 102 JP 192 JP 605 US 486 US 505 JP 194 JP 213	0935 B2 9987 A 7487 A 4259 A2 5756 A 4115 C 1679 B 8183 A 9598 A 1073 C 8265 A	23-11-1989 28-01-1988 22-01-1988 27-01-1988 27-01-1989 25-04-1995 06-07-1994 19-09-1989 22-10-1991 23-06-1995 28-05-1990 31-08-1994